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STANDARD OPERATING PROCEDURE

Instructions for the use of the Global FP201 flow probe for estimating velocity in wadable streams.

KEY WORDS

Water velocity

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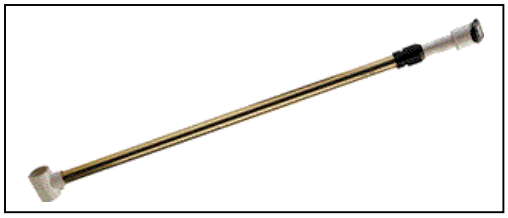
1.0 INTRODUCTION

1.1 Purpose

This Standard Operation Procedure (SOP) discusses the general procedure for estimating the average water velocity in feet per second and meters per second using the Global FP201 Flow Probe. To determine discharge refer SOP FSWA009.

2.0 MATERIALS



2.1 Global FP201 flow probe manual

2.2 Global FP201 flow probe

3.0 PROCEDURES

3.1 Steps Prior to Calibration

3.1.1 Check probe display panel prior to going to the field to make sure the batteries are working and the units displayed on the computer screen are the appropriate English or metric units.

3.1.2 If metric units of measurement or a battery change are needed, recalibrate the computer on the flow probe.

3.1.3 If you are not using the Flow Probe for 1-2 months, leave it in SLEEP mode to reduce battery drainage. Sleep mode will appear on your screen by pushing the right button.

3.2 Calibrating the Flow Meter in English or Metric Units

3.2.1 Hold the right and left button simultaneously for 8 seconds.

3.2.2 All of the display segments will be displayed, and then “mi” for English units and “km” for metric units will appear on the screen.

3.2.3 To measure in “feet per second,” shift to “mi.” Use the left button to shift between English and metric units. Push the right button to enter “CAL” mode. Push the left button to increase the number when the arrow points up and decrease the number when the arrow points down. To set the calibration to “feet per second” change the number to 33.31.

3.2.4 To measure in “meters per second,” shift to “km.” Use the left button to shift between English and metric units. Push the right button to enter “CAL” mode. Push the left button to increase or decrease the number. To set the calibration to “meters per second” change the number to 1603.

3.3 Steps Prior to Measuring the Stream Velocity

3.3.1 The Global FP201 flow probe handle is a three-section rod expandable from 5 to 15 feet. To lengthen the handle, loosen the locking nut on the handle. Pull out the top piece to correct the length and retighten the nut.

3.3.2 Ensure the flow probe’s propeller turns freely by blowing strongly on it. Place it directly into the desired flow with the arrow shown inside the propeller facing downstream. Hold the probe handle either to the “right or left” side of you to make sure that your body is not blocking the flow.

3.4 Determining the Stream Velocity in Feet per Second

3.4.1 Use the right button on the computer to scroll until “V” for velocity appears on the left hand side of the screen. The top number in “V” mode is the instantaneous velocity to the nearest 0.1 ft/sec.

3.4.2 Push the left button to shift between maximum (“mx”) and average (“av”) velocities to the nearest 0.01 ft/sec (displayed at the bottom of the screen).

3.4.3 Hold the probe for several seconds until the average velocity reading stabilizes. Then remove the probe. The average velocity will freeze once the propeller stops turning. Record reading.

4.0 FLOW PROBE MAINTENANCE

4.1 General Maintenance

4.1.1 Probe Handle:

During use, sometimes the flow probe handle fills with water. After use, dry the handle by separating the two sections, draining the water out and letting it dry in a warm place before reassembling. The handle can be cleaned with mild soap and water. DO NOT submerge the top of the pole and the computer. If the computer gets wet – DRY IMMEDIATELY with a soft cloth. Take the batteries out and place the computer in a warm place overnight to dry.

4.1.2 Battery Replacement:

When replacing the battery, pull the computer holder unit from the top of the flow probe rod (the holder is connected to the probe by a jack and socket). Open the battery compartment on the back of the computer with a screwdriver or similar device. Replace the battery with the "+" side up. Use a Radio Shack 675 HP battery, or equivalent.

4.1.3 Propeller:

Confirm that the turbo propeller turns freely before and after each measurement. Blow on the propeller in the direction of flow, it should turn freely and make noise. If not, rinse it in clean water or soak it in mild soapy water and remove any visible strings or fine materials from the bearing.

4.2 Trouble Shooting the Flow Probe

4.2.1 If the computer is not receiving a signal:

4.2.1.1 Check the small metal magnet, covered with clear rubber that is installed on the backside of the propeller, on one blade. Be sure the magnet is in place and has not been removed. This magnet is necessary to provide a signal for the computer.

4.2.1.2 Remove the computer holder from the pole handle by pulling the holder up and away from the pole. Next, make sure

there is no moisture around the plug or socket. If the plug and socket are wet, dry parts off and place them in a warm place overnight. Push the computer holder back on to the handle, as hard as you can, until you hear a “pop” or “snap”. If you don’t hear this sound the computer holder is not on all the way or you have a defective socket connector.

4.2.1.3 Zero the “av” mode on the prop for 5 to 7 seconds. You should see a number in “av” if the unit is working.

4.2.1.4 If the display becomes weak or does not light up at all, replace the battery.

4.2.3 If steps 4.2.1.1 to 4.2.1.4 don’t restore the computer, call the factory or return the flow probe for repair.
www.globalw.com, 800-876-1172

5.0 REFERENCES

FP101-FP202 Global Probe User’s Manual, Global Water Instrumentation Inc., 11257 Coloma Road, Gold River, CA.